WHAT IS CLAIMED IS:

1. A swage collar apparatus for sealing a connection of a fastener through a composite assembly of workpieces together and for preventing leakage through the connection, the fastener including a shaft having an externally threaded or grooved section, the swage collar apparatus comprising:

a swage collar adapted to be disposed over the shaft of the fastener; and

an internal sealing insert disposed in the swage collar over the fastener.

2. The swage collar apparatus of Claim 1, wherein the swage collar comprises a hollow, generally cylindrical collar, having a main body portion with a main central bore, and a base portion with an internal shoulder formed in the main central bore so as to form a seal receiving guide, the internal shoulder having a diameter that is larger than the diameter of the main central bore.

3. The swage collar apparatus of Claim 2, wherein the base portion is flared outward, having an external diameter larger than the main central bore.

4. The swage collar apparatus of Claim 1, wherein the swage collar is made of a metal.

5. The swage collar apparatus of Claim 4, wherein the swage collar is made of aluminum.

6. The swage collar apparatus of Claim 4, wherein the swage collar is made of titanium.

7. The swage collar apparatus of Claim 1, wherein the swage collar is made of a deformable material.

8. The swage collar apparatus of Claim 1, wherein the internal sealing insert is made of tetrafluoroethylene.

9. The swage collar apparatus of Claim 1, wherein the shaft includes an unthreaded section, and the internal sealing insert interfaces with the unthreaded section of shaft of the pin.

10. The swage collar apparatus of Claim 1, wherein the shaft includes a threaded section and an unthreaded section, and the internal sealing insert interfaces with the threaded section and the unthreaded section of the shaft of the pin.

11. The swage collar apparatus of Claim 2, wherein the internal sealing insert has a surface defining an annular rounded exterior flange, and the internal shoulder of the main central bore has a surface defining a corresponding rounded channel or groove into which the annular rounded exterior flange interfits, to thereby lock the internal sealing insert into place within the internal shoulder portion of the main central bore.

12. The swage collar apparatus of Claim 11, wherein the internal shoulder of the main central bore includes an intermediate stepped portion having an interior diameter that is less than the interior diameter of the internal shoulder and greater than the diameter of the main central bore.

13. A sealing fastener apparatus for joining a composite assembly of workpieces together and for preventing leakage through a connection formed by the fastener through the composite assembly of workpieces, comprising:

a fastener having a shaft;

hollow, generally cylindrical swage collar, the swage collar having a main body portion with a main central bore adapted to be disposed over at least a

portion of the fastener; and

an internal sealing insert disposed in the swage collar about the fastener.

14. The sealing fastener apparatus of Claim 13, wherein the fastener comprises a pin having a head and a shaft, the shaft having an externally threaded section and an unthreaded section.

15. The sealing fastener apparatus of Claim 13, wherein the swage collar includes a base portion with an internal shoulder formed in the main central bore so as to form a seal receiving guide, the internal shoulder having a diameter that is larger than the diameter of the main central bore.

16. The sealing fastener apparatus of Claim 13, wherein the base portion is flared outward, having an external diameter larger than the main central bore.

17. The swage collar apparatus of Claim 13, wherein the swage collar is made of a metal.

18. The swage collar apparatus of Claim 17, wherein the swage collar is made of aluminum.

19. The swage collar apparatus of Claim 17, wherein the swage collar is made of titanium.

20. The swage collar apparatus of Claim 13, wherein the swage collar is made of a deformable material.

21. The swage collar apparatus of Claim 13, wherein the internal sealing insert is made of tetrafluoroethylene.

22. The swage collar apparatus of Claim 14, wherein the internal sealing insert interfaces with the unthreaded section of shaft of the pin.

23. The swage collar apparatus of Claim 14, wherein the internal sealing insert interfaces with the threaded section and the unthreaded section of the shaft of the pin.

24. The swage collar apparatus of Claim 15, wherein the internal sealing insert has a surface defining an annular rounded exterior flange, and the internal shoulder of the main central bore has a surface defining a corresponding rounded channel or groove into which the annular rounded exterior flange interfits, in order to lock the internal sealing insert into place within the internal shoulder portion of the main central bore.

25. The swage collar apparatus of Claim 24, wherein the internal shoulder of the main central bore includes an intermediate stepped portion having an interior diameter that is less than the interior diameter of the internal shoulder and greater than the diameter of the main central bore.

26. A method of installing a sealing fastener, the sealing fastener including a fastener having a shaft, a swaging collar, and an internal sealing insert, the swaging collar and internal sealing insert forming a swage collar assembly, the swaging collar having an internal bore and adapted to be disposed over the shaft of the fastener, and the internal sealing insert disposed within at least a portion of the internal bore of the swaging collar, comprising:

fitting the swage collar assembly over the fastener;

fitting a swaging tool over the swage collar assembly, the swaging tool having a collar entrance aperture at one end, the collar entrance aperture having an inside diameter at an inside edge that is slightly larger than the outside diameter of the

swaging collar at the outside edge of the swaging collar, so as to fit over the swaging collar; and

forcing the swaging tool over the swage collar assembly with sufficient force to cause plastic deformation in the swaging collar so that the material of the swaging collar is forced into engagement with the shaft of the fastener, and to bring the internal sealing element into sealing engagement with the shaft of the fastener to form a fluid impermeable seal to prevent leakage through a connection formed by the fastener through the composite assembly of workpieces.

27. A swage fastening system, comprising:

a pin, the pin having an enlarged head, a smooth neck, and a threaded body;

a generally cylindrical collar, the collar having a main central bore, a base portion with an internal shoulder formed in the main central bore so as to form a seal receiving guide, the internal shoulder having a diameter that is larger than the diameter of the threaded body;

a sealing ring disposed within the internal shoulder and adapted to receive the pin; and

a swage tool which mechanically forces the collar over the pin affixing a workpiece between the enlarged head and the collar with the sealing ring deforming and forming a fluid impermeable seal.

28. The swage fastening system of Claim 27, wherein the collar is made of a metal.

29. The swage fastening system of Claim 28, wherein the swage collar is made of aluminum.

30. The swage fastening system of Claim 28, wherein the swage collar

is made of titanium.

31. The swage fastening system of Claim 27, wherein the swage collar is made of a deformable material.

32. The swage fastening system of Claim 27, wherein the sealing ring is made of tetrafluoroethylene.

33. The swage fastening system of Claim 27, wherein the pin includes an unthreaded section, and the sealing ring interfaces with the unthreaded section of the pin.

34. The swage fastening system of Claim 27, wherein the pin includes an unthreaded section, and the sealing ring interfaces with the threaded body and the unthreaded section of the pin.

35. The swage fastening system of Claim 27, wherein the sealing ring is formed of tetrafluoroethylene.